DOWNLOAD PDF GENETIC TESTING FOR ALZHEIMER DISEASE: THE REVEAL STUDY CATHERINE Y. READ . [ET AL.]

Chapter 1 : Catherine Yetter Read - Connell School of Nursing - Boston College

Genetic testing for Alzheimer disease: the REVEAL study. Read, Catherine Y.; Roberts, J. Scott; Linnenbringer, Erin; Green, Robert C. Genetic testing for.

In a study published in the Journal of the American Medical Association, researchers tested 19, healthy white women for gene variations that studies have linked to an elevated risk of cardiovascular disease. Genetic risk scores were calculated based on the number of gene variations present. During the study, of the participants had a cardiovascular event, including heart attacks, strokes, 63 deaths, and procedures to open blocked arteries. The year risk of such an event was 3 percent in people with the lowest genetic risk score and 3. However, after adjusting for traditional risk factorsâ€”including family history, blood pressure, and high-density lipoprotein cholesterol levelsâ€”the genetic risk score was no longer predictive of cardiovascular disease. At this point, routine genetic testing for cardiovascular disease is not recommended. High blood pressure, elevated cholesterol, physical inactivity, obesity, diabetes, smoking, and a family history of heart attacks or strokes remain the strongest predictors of cardiovascular risk in both women and men. Genes cannot tell the whole story. That said, genetic research on heart disease might prove valuable in the future. And researchers continue to uncover previously unknown genetic associations with heart attack and risk factors such as high cholesterol, blood pressure, diabetes and obesity. What about direct-to-consumer genetic tests? While research is ongoing, many companies are promoting direct-to-consumer genetic testing kits with the promise of providing information about your risks of cardiovascular disease. Genetic testing can be useful for assessing risk of certain health concerns, for example, testing for the BRCA1 and BRCA2 genes that play into breast cancer. A genetic counselor is specially trained to educate and support patients in their decisions about genetic testing. Counselors can explain various tests, note the pros and cons, and help interpret test results. In most cases, genetic tests simply provide a probability that you will develop a disease, not a definitive answer. A genetic test is the most valuable when you can do something about the results, such as take preventative measures or receive earlier treatment. Fortunately, when it comes to heart health, we already know steps you can take: Eat a diet that is low in saturated fat, sodium and added sugars. Choose lots of fresh fruits and vegetables to get your fill of potassium and fiber. Choose skinless poultry and lean meats over fatty options. Get 30 minutes or more of moderate aerobic exercise such as brisk walking on most days of the week. Reduce stress and get adequate sleep. National Society of Genetic Counselors. Will We Get There?.

Chapter 2 : FDA approves simple genetic tests for risk of Alzheimer's

The REVEAL (Risk Evaluation and Education for Alzheimer's Disease) study provides APOE genotype disclosure to first degree relatives of patients with Alzheimer's disease (AD). Individuals who test positive for the E4 allele of APOE are at increased risk of developing AD, but little is known about whether people would alter their health.

Genetic susceptibility testing for Alzheimer disease AD with APOE genotype disclosure is not recommended for clinical use but is available through direct-to-consumer DTC genetic testing companies. Little is known about whether APOE genotype disclosure would actually prompt changes in nutrition behaviors among at-risk individuals. Such changes occurred despite the absence of evidence that supplement use reduces the risk of AD. Given the expansion of DTC genetic tests, this study highlights the need for future studies in disease risk communication. Mutations in these genes may increase disease susceptibility but are not causative for disease. Genetic susceptibility testing allows unaffected individuals to obtain risk information for a variety of common complex diseases and health conditions including Alzheimer disease AD , cancer, and diabetes 1 , 2. The development of these complex diseases is dependent on genetic and nongenetic factors; therefore, genetic susceptibility tests can vary in predictability and validity. Individuals can directly purchase these genetic tests over the Internet through a growing number of direct-to-consumer DTC genetic testing companies 3 , 4. This DTC initiative has been on the rise in recent years and remains controversial because of the lack of overall regulation, the wide variability in tests used, and the interpretation of results 5. Despite the recent rise in the popularity of personalized medicine, including DTC genetic testing, research regarding the effect of genetic testing on health behaviors is very limited. Supplements are marketed for everything from alleviating back pain to improving memory, despite the relative lack of evidence for these claims. For example, Ginkgo biloba is a botanic supplement commonly taken to improve memory and prevent dementia, but a recent clinical trial 8 reported that the administration of G. An emerging area for the marketing of dietary supplements is in partnership with DTC genetic testing. This marketing, combined with the limited regulation of the supplement industry, may lead to questionable choices being made by individuals looking to improve their quality of life or prevent future disease. AD provides an instructive context in which to examine health-behavior changes, including dietary supplement use, after genetic risk assessment. Like many complex diseases, the development of AD depends on many genetic and nongenetic factors. Several susceptibility genes for AD were identified 9 â€” The most well-studied susceptibility gene is APOE. The APOE gene has 3 allelic variations: This finding was based on a composite variable that encompassed changes in diet, exercise, supplements, and medications. The current study seeks to determine the effect of genotype risk disclosure on the use of dietary supplements. Details of the REVEAL Study, including the clinical trial rationale, study design, and other results, were described elsewhere 15 â€” Eligible participants were cognitively intact adult subjects with a first-degree relative who had been diagnosed with AD. All participants were randomly assigned to receive information about AD and genetic risk assessment in 1 of 2 ways: Participants were informed that AD is a complex condition, and disease development is dependent on several genetic and nongenetic factors. The primary outcomes of that trial will be reported elsewhere. The risk assessment involved disclosure of genotype by either genetic counselors or study physicians and individualized risk estimates for developing AD. These estimates were based on age-, sex-, race-, and APOE genotypeâ€”specific risk curves 18 , Participants were provided with their lifetime risk of developing AD range: Graphical representations of these estimates were shown to subjects during the disclosure session. In addition to these risk curves, participants were reminded that a positive test result did not mean that they would develop AD, as there are genetic factors other than APOE that may increase risk. Therefore, your risk estimate is an interpretation of your known risk factors and is based on our current knowledge.

Chapter 3 : Free Review of Ancestry Dna Tests | Genetics Digest

C onsumers will soon be able to mail a saliva sample to genetic testing company and get back data on their risk for developing diseases such as Parkinson's, late-onset Alzheimer's, and celiac.

In fact, the market has more than doubled in size. The things you learn from them are irresistible: Most companies offer this basic service, but some are far better than others. Family History â€" This kind of goes hand-in-hand with Ancestry. If your parents also have their DNA tested, you can sometimes sort out which genes you received from each side of the family. Many people use this feature to discover long-lost relatives. Health Risks â€" Some DNA tests can reveal unique traits embedded in your genetic code that may put you at risk for certain health conditions. This can help you alter your lifestyle to try and prevent them. Family Planning â€" A DNA test can help you find out what genes you may pass onto your children, for better or worse. With so many people clamoring to get their hands on the benefits listed above, more and more DNA test companies have been rising to meet them. Our team of scientists, researchers, and writers at Genetics Digest know the field better than most. Some brands have a great marketing team with a massive advertising budget. Despite the great marketing, some of those companies have subpar services at best. To be clear, a popular company with great marketing does NOT necessarily mean that they have a bad service. A couple of them have really great services! They give you a unique opportunity to be along for the ride. However, price is a tricky quality to navigate. A cheap Ancestry DNA test is most likely not the best dna test and will likely give you very little information. These tests will tell you things you already know about yourself, like which continent your genes came from. Sometimes cheap tests are simply trying to undercut the marketâ€"They may be selling at a loss up front with the hopes that customers will buy more from them later. Expensive DNA tests may have a great product, but you can often find a product of similar or even better quality at a cheaper price. You have to strike a comfortable middle ground. Aiming for a test around this amount will help ensure that you get a good product without over-paying. DNA tests are typically The most precise DNA tests currently on the market have at least 20 unique regions they use in their Ancestry reports. The best companies will have multiple regions on each continent in their reports rather than having most of their tested regions all on the same continent. However, you have to be wary of companies overselling how precise their tests are. Some companies claim to have hundreds of regions in their reports. In our experience, this is bending the truth a bit. Most of them really test for regions, but then list the names of countries that are contained within those regions without actually testing DNA for them. In other words, some companies can be a little misleading with their marketing. We ranked the services by these 10 factors:

Chapter 4 : Will Genetic Testing Reveal My Risk of Heart Attack? - Heart Attack - www.nxgvision.com

The purpose of this study is to provide healthy adults with genetic testing and information about their chances of developing Alzheimer's disease. Alzheimer's disease is a common condition affecting memory and thinking. Genes can sometimes be used to provide risk estimates for the eventual.

Abstract Introduction or background Genetic testing for rare Mendelian disorders represents the dominant ethical paradigm in clinical and professional practice. Sources of data This paper retraces the historical development of ethical reasoning in relation to predictive genetic testing and reviews a range of ethical, sociological and psychological literature from the s to the present. Areas of agreement In the past, ethical reasoning has embodied a distinct style whereby normative principles are developed from a dominant disease exemplar. Areas of controversy This reductionist approach to formulating ethical frameworks breaks down in the case of disease susceptibility. Furthermore, what genetic susceptibility means to individuals and their families is diffuse and often mitigated by other factors and concerns. Unlike other kinds of medical testing, genetic testing not only reveals the risk to an individual, but it also reveals the risk to other family members. In addition to the immediate or future consequences that information may have for an individual, a genetic test may reveal the risk to an offspring, it may have serious reproductive consequences for a family, the information may become a burden, it may lead to onerous obligations to disclose that risk to other relatives, and it may lead to stigma and discrimination. Research has shown that people can react to genetic information in very different ways, ranging from relief and resolution to denial and self-blame. To a large extent, these policies were developed with a particular disease in mind, the extreme nature of which served as a model for other kinds of genetic testing. However, new evidence has come to light that suggests that Mendelian disorders may not be a suitable model with respect to genetic testing for complex disorders. The ethics of disclosing risk for susceptibility to common complex disorders may require a new paradigm of ethical policy. Such a paradigm may be justified if we consider the difference between predictive and susceptibility testing. In other words, genetic testing is predictive of rare, Mendelian disorders. In contrast, susceptibility testing is a test for common disorders they occur more frequently in the population where there is no single causative gene action, but multiple genes each conferring a small risk interacting with environmental factors. If predictive testing is deterministic then susceptibility testing is probabilistic and thus highly contingent. The implication of the latter is that the inherent uncertainty of risk information significantly clouds its predictive and diagnostic potential. The ethics of disclosing genetic risk: In the New England Journal of Medicine, for instance, enthusiasm towards genetic screening programmes were greeted with cautionary reactions from ethicists and genetic counsellors who were keen to ensure that such programmes were guided by ethical principles. However, from the s onwards, a discourse on the ethics of disclosure grew out of an alliance between genetics professionals and medical ethicists. Building on the influential Belmont Report 16 and later developments by the Hastings Centre, 17 ethical concepts provided clarity to professionals and protection to individuals regarding the potentially undesirable effects of genetic screening. As one commentator had put it: The best way of maximizing autonomy was combining information-giving with psychosocial support to enable individuals to choose wisely. HD and ethical reasoning HD is a progressive and incurable disorder of the central nervous system dominantly transmitted through an autosomal gene with complete penetrance. Prior to discovering the approximate location of a causal gene in , 23 a discourse on the ethical issues of counselling families at risk of HD had existed since the early s. In light of the perceived fears about psychosocial implications of testing for HD, the professional community proceeded very cautiously. Studies of psychiatric morbidity seem to confirm that receiving an early diagnosis may result in suicide and depression, 33â€”36 while others reported problems of confidentiality, legal protection and informed consent. These and other variations of the guidelines bear more than a passing resemblance to the four bioethical principles of autonomy, beneficence, non-maleficence and justice. No test should be offered without proper counselling and

professional support. The test should only be available to those who have reached the age of majority. No person should be discriminated against as a result of testing. Testing should be delayed if there is evidence that the results will lead to psychosocial harm. The results of a test are confidential and the property of the individual, and under no circumstances shall any professional communicate this information to third parties. While many stand to benefit from guidelines on predictive testing for HD, the formulation of ethical frameworks in terms of principles and exemplars are not without criticism. The common expectation among ethicists and health professionals is that robust frameworks can serve as guidelines for the genetic testing of other conditions.

Chapter 5 : Genetic testing for Alzheimer disease: the REVEAL study

Alzheimer's diagnosis - medical evaluation / tests are important if you or a loved one experience memory loss or other symptoms of Alzheimer's or dementia. Get information and resources for Alzheimer's and other dementias from the Alzheimer's Association.

Chapter 6 : - NLM Catalog Result

/ Leonard W. Poon -- A developmental perspective on aging and genetic technology: a response to studies of centenarians / Diane Scott-Jones -- Genetic testing for Alzheimer disease: The REVEAL study / Catherine Y. Read.

Chapter 7 : Alzheimer's: Is it in your genes? - Mayo Clinic

Five areas were explored in the interviews: (1) motivation to participate in the research study, (2) experience participating in the current study, (3) results of the research project, (4) behavior changes made as a result of the genetic testing, and (5) genetic testing more generally.